

WHAT IS CLAIMED IS:

1. A method of die temperature control, comprising:
  - for a valved cooling line for a die area of a die:
    - receiving an indication of instantaneous temperature of said die area cooled by said valved cooling line;
    - determining an average temperature over a pre-determined first time interval from instantaneous temperature values for said first time interval;
    - based on said average temperature, determining a control parameter for a valve of said valved cooling line; and
    - controlling said valve during a second time interval next subsequent to said first time interval based on said control parameter.
2. The method of claim 1 wherein said valve may be controlled to be open or closed and wherein said determining a control parameter for said valve comprises determining a proportion of said second time interval during which said valve should be open.
3. The method of claim 1 wherein said first time interval and said second time interval are of identical duration.
4. The method of claim 3 wherein each of said first time interval and said second time interval have a duration equivalent to a nominal die cycle time.
5. The method of claim 1 wherein said determining a control parameter for said valve in a given temperature band is based on a difference between said average temperature and a set point temperature.
6. The method of claim 5 wherein said determining said control parameter for said valve in said given temperature band uses proportional, integral, and derivative modes of feedback control.
7. A computer readable medium containing computer executable instructions which, when executed on a processor input with instantaneous temperature for a die area of a die and

having a control output for a control valve of a cooling line for said die area cause said processor to:

determine an average temperature over a pre-determined first time interval from instantaneous temperature values for said first time interval;

based on said average temperature, determine a control parameter for a valve of said valved cooling line; and

control said valve during a second time interval next subsequent to said first time interval based on said control parameter.

8. The computer readable medium of claim 6 wherein said valve may be controlled to be open or closed and wherein said computer executable instructions cause said processor to determine a control parameter for said valve by determining a proportion of said second time interval during which said valve should be open.
9. The computer readable medium of claim 6 wherein said first time interval and said second time interval are of identical duration.
10. The computer readable medium of claim 6 wherein each of said first time interval and said second time interval have a duration equivalent to a nominal die cycle time.
11. The computer readable medium of claim 6 wherein said computer executable instructions cause said processor to determine a control parameter for said valve in a given temperature band by determining a difference between said average temperature and a set point temperature.
12. The computer readable medium of claim 6 wherein said computer executable instructions cause said processor to determine a control parameter for said valve in said given temperature band by using proportional, integral, and derivative modes of feedback control.
13. A die casting machine, comprising:
  - at least one thermocouple for providing an indication of instantaneous temperature for a die area;

a cooling line for said die area having a valve;  
a processor input by an output of said thermocouple and operatively associated with  
said valve for controlling said valve, said processor for:  
determining an average temperature over a pre-determined first time interval  
from instantaneous temperature values for said first time interval;  
based on said average temperature, determining a control parameter for said  
valve; and  
controlling said valve during a second time interval next subsequent to said  
first time interval based on said control parameter.